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AUTHOR McMurry, James G.; Trott, James W.
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ABSTRACT

In July 1985, declining state revenues forced Louisiana state legislators to institute a number of layoffs and hiring freezes at postsecondary-level vocational-technical schools in the state and to discontinue the state's policy of paying for the continuing education courses that the state's secondary-level trade and industrial education (T&I) teachers needed to fulfill their state certification requirements. These two factors created the need for alternative methods of delivering professional continuing education to T&I teachers throughout the state. A telecourse entitled "Testing in Vocational Trade and Industrial Education" was developed to meet this need. The telecourse offered the following advantages: one teacher could teach the class's four sections simultaneously; the course could be offered to the smallest of classes (one section contained only one student); travel times and costs were reduced; and the telecourse method was perceived as being more intimate than correspondence study. The teachers did, however, note the following disadvantages of the telecourse approach: lack of personal contact between student and instructor, inability to provide individualized attention to students, inability to supervise closely and provide immediate feedback to students, fewer opportunities to evaluate students, and greater formality in the relations between teacher and students than in face-to-face instruction. Despite similar misgivings about the telecourse approach, most students (a 2:1 majority) found the course to be effective. (MN)

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TELELEARNING OFFERS NEW ALTERNATIVES FOR T&I DELIVERY SYSTEMS

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by

Dr. James G. McMurry
Dr. James W. Trott

School of Vocational Education
Louisiana State University
Baton Rouge, Louisiana

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TELELEARNING OFFERS NEW ALTERNATIVES FOR T&I DELIVERY SYSTEMS

Rationale for Telelearning Course

Since the 1930's, the School of Vocational Education at Louisiana State University has had as one of its functions the providing of on- and off-campus classes for the certification of Vocational Trade and Industrial Education (VTIE) instructors. Although four other universities in Louisiana also provide such courses, LSU is the only university which does so on a state-wide basis. For the past several years, total enrollments in the courses taught by LSU have ranged from approximately 350 to 450 annually. Typically, classes have been taught in at least 10 different locations each year. However, during the spring and summer of 1986, two events occurred which were to significantly impact on VTIE class enrollments and drastically alter LSU's pattern of off-campus classes.

The first event to impact on enrollments was the passage by the Board of Elementary and Secondary Education (which has jurisdiction over both secondary and postsecondary VTIE programs) of a motion to waive the VTIE course requirements for all postsecondary VTIE instructors employed prior to July 1, 1985. The justification for this action was that prior to that date the state had paid the tuition costs of the courses, and the instructors had been hired with that understanding. However, as a result of declining state revenues, this practice had been discontinued by the state legislature as of July 1, 1985. The immediate impact of this action was to exempt approximately 150 instructors from further VTIE certification courses.

The second event, also a result of rapidly declining state revenues and projected budget deficits, was a rather sharp reduction in the budgets of the

postsecondary vocational-technical schools and resulting faculty layoffs. Since the termination of faculty was based on seniority, new faculty who had been hired since July 1, 1985, were generally the first to be dismissed. Although we do not have accurate figures, we estimate that the impact on VTIE course enrollments due to a combination of these terminations and the concomitant freezing of vacant positions to be from 75 to 100.

As a result of these two events, some decline in enrollments occurred as early as the summer of 1986. However, it was not until the fall, 1986 semester that the full impact was felt. Typically, LSU offers one on-campus class and 3 to 5 off-campus classes in three different locations during the fall. During 1986, the on-campus class was cancelled due to low enrollment, and only one off-campus class could be taught as a result of an inability to meet the minimum enrollment requirement of 15 in each class offered. Similar results were experienced by the other four universities teaching VTIE certification courses.

During October of 1986, a survey was made of all postsecondary schools and secondary school systems in the state to determine the need for VTIE certification courses during the spring of 1987. The results of this survey indicated that minimum enrollment requirements could be met in only one or two locations in the state. However, in most areas there were one or more persons needing a course for certification in order to maintain their certificate for the 1987-88 year. Since we were aware of the telelearning program developed by the Division of Continuing Education and had previously discussed the feasibility of offering VTIE courses through it, we immediately contacted them and made plans to offer a course by telelearning during the spring of 1987.

Course Taught and its Configuration

The course taught by telelearning was VTIE 2077 - Testing in Vocational Trade and Industrial Education. This course was selected because it was listed by the instructors participating in the survey as the one most needed and because it appeared well suited to this method of teaching.

In order to make the course available to the maximum number of instructors needing it for VTIE certification, classes were scheduled at all but one of the locations in the state where the Division of Continuing Education had established satellite stations. The exception was the New Orleans area where the number of students and the relatively short driving distance made it possible to teach a regular off-campus class. The areas of the state served were the Shreveport, Alexandria, Opelousas, and Baton Rouge areas (figure 1, page 10). Two areas in which courses are normally offered during the spring could not be served due to a lack of available equipment which could be assigned to them. These were the Monroe/Tallulah and Bogalousa areas. Students in these areas were encouraged to enroll in one of the two VTIE certification courses offered through correspondence study.

Telelearning

What is telelearning? "Telelearning," as it is used at LSU, is a form of audiographics instruction. Telephone linkage is utilized with a combination of an instructor's headset, student microphones, and speakers for audio, and a computer with a color monitor and graphics pad for the graphics portion. This arrangement permits simultaneous two-way audio and graphics communication between the instructor and the students. There is also full, concurent two-way communication between all class sites.

In this course, the instructors were able to communicate with students at all four locations simultaneously. Students at each location could not only

communicate with the instructors, but could also communicate with each other using both audio and graphics.

Advantages of Telelearning (compared to regular off-campus courses). The following advantages were achieved by using telelearning to teach the course:

1. Small classes (less than the minimum enrollment of 15) could be taught at the different locations provided the total enrollment equalled 15. In this course, class size varied from 1 to 12 with a total enrollment of 22.
2. Only one instructor was required to teach all four sections of the course. However, as a learning experience, three were actually involved at various times.
3. Since the "home" station was located on campus, no travel time or cost (other than for the initial meeting) was required.
4. More intimate than correspondence study.

Disadvantages of Telelearning (compared to regular off-campus courses). The following were considered to be disadvantages of telelearning:

1. Lack of "personal contact" with the students.
2. Inability to provide personalized individual attention to the students.
3. Inability to closely supervise and provide immediate feedback on students' classroom work and assignments.
4. Fewer opportunities for evaluation of students.
5. Interaction between students and between students and instructor is limited and more "formal."

Student Evaluation of the Telelearning Course. In order to ascertain the acceptance of the telelearning course by the VTIE students, an evaluation form was distributed at the end of the course to each of the 22 students by the

Division of Continuing Education. The responses were tabulated and are summarized as follows:

1. Almost all of the students knew little or nothing about telelearning prior to the course.
2. Most of the students (about 2 to 1) had some previous experience with computers.
3. Although some reported growing more confident with the system during the course, most (about 3 to 1) felt comfortable during the first class period and continued to do so.
4. Technical difficulties were not considered a problem. Only one student felt that it may have been a hinderance to participation.
5. Most (about 2 to 1) felt that the instruction was adequately covered. Only one felt that it was poorly covered.
6. Although a small majority believed that the absence of an instructor at the site was a deterrence to learning, about 40% did not.
7. Almost all felt that the "cohesion" of the students in the class was not affected.
8. Although a few felt that the class sessions were less organized, most felt that it was about the same.
9. Most felt that the frequency of the class meetings (once a week) should not change.
10. Responses were about equally divided as to the effectiveness of the visual presentations on the screen. A slight majority indicated a need for some improvement. The others indicated that they were either effective or very effective.
11. The students were almost unanimously in agreement that there was

adequate time to discuss problems or course content personally with the instructor.

12. The students were about equally divided as to whether or not telelearning affected their willingness to ask questions. Approximately 50% indicated no difference from regular instruction and approximately 50% felt that they were discouraged.

13. Most students felt that there was no impact on their willingness to interact with other students.

14. The majority (about 2 to 1) indicated that the class time was less effective than regular class sessions.

15. In terms of overall effectiveness, the majority (about 2 to 1) indicated that the class was effective.

16. All but one student indicated that they would take another telelearning course if offered. However, about 20% indicated that they would do so only if they could not schedule a regular class (with an instructor present).

17. Some advantages listed by the students were:

    a. Availability of a class when an off-campus class could not be offered.

    b. More relaxed and informal.

18. Disadvantages listed by the students were:

    a. Discourages questions by students.

    b. Can become boring and repetitious.

    c. Human element (instructor) missing.

    d. Lack of feedback from instructor.

Some Observations and Recommendations

Based on our experience in teaching the course, conversations with students, and the results of the student survey, the following observations and recommendations are made concerning telelearning as an alternative delivery system:

1. Although perhaps not as effective or enjoyable as a regular class, telelearning is considerably better than a correspondence course.
2. Considerable effort must be made to "organize" and prepare instructional materials and aids.
3. It is more difficult to develop an informal, relaxed atmosphere for learning.
4. It is an effective method of teaching off-campus classes both from an instructional and economical viewpoint.
5 Where enrollments are low, driving distances are prohibitive, instructor time for off-campus instruction is not available, or costs of traditional off-campus instruction are prohibitive, telelearning should be considered as a desirable, effective alternative to the traditional method of sending instructors to off-campus locations for classroom instruction.

EQUIPMENT REQUIRED FOR TELELEARNING COURSE AND ESTIMATED COST

1. Equipment required for one home station (location from which course will originate).

Microcomputer with 512K memory, 20 meg hard disk (IBM XT or similar), and color monitor	$2,500.00
OPTEL software and modem	2,500.00
Penpad electronics graphics tablet(or other tablet compatible with OPTEL software), supporting software, and command template	1,750.00
DAROME audio equipment including headset, microphones, and speaker system	900.00
	$7,650.00
Optional:	
Printer	500.00
Audio/Video/Graphics Workstation -A.T.T. image capture board with video switcher and telephoto lens	1,750.00
Video Camera	1,500.00
	$11,400.00

2. Equipment required for one field station to receive course at an off-campus site.

Microcomputer with 512K memory (IBM XT or similar), and color monitor	$2,000.00
OPTEL Software and modem	2,500.00
DAROME audio equipment including microphones and speaker system	900.00
	$5,400.00
Optional:	
Printer	500.00
	$5,900.00

Cost of one home station and one field station:	
Without options	$13,050.00
With options	$17,300.00

NOTE: Initial costs would be lower where existing equipment (such as computers) can be utilized.

ESTIMATED COST OF INSTRUCTION

One Section of a Course

	Regular Off-Campus Course:	Telelearning Course:
Instructor (Approx. Supp. Pay)	- $3,000	$3,000
Travel (Av. mileage & meals per class - $55)	- 825	55 (first class)
Telephone time (point-to-point)	- None	450 to 945* (depends on long distance rate)
Total (Based on one class meeting 3hrs. for 15 sessions)	$3,825	$3,505 to $4,000

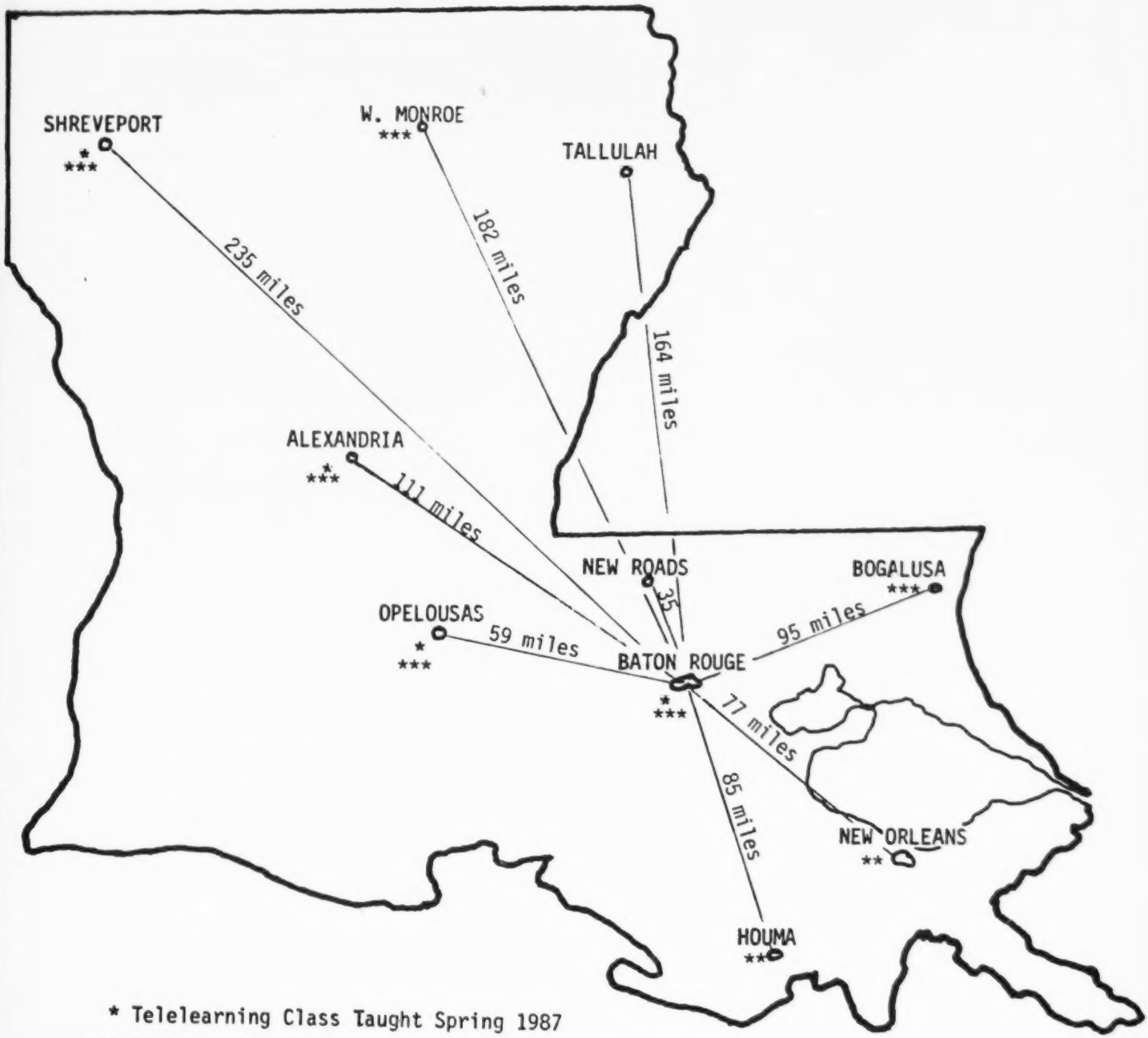
Three sections of a Course - Different Locations

Instructor (three)	- $9,000	$3,000 (one)
Travel	- 2,475	165 (first class)
Telephone time (w/bridge)	- None	1,350 to 1,800 **
Total	$11,457	$4,515 to $4,965

* Based on telephone rate of $10.00 to $21.00 per hour point-to-point.

** Based on telephone rate of $30.00 to $40.00 per hour using a bridge for two or more of-campus sites.

LOCATIONS OF VTIE CLASSES TAUGHT BY LOUISIANA STATE UNIVERSITY



* Telelearning Class Taught Spring 1987

** On-Site Class Taught Spring and/or Fall 1987

*** Telelearning Class Tentatively Planned for Spring 1988

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